

## CLAIMS

1. A method for reducing interference due to handshake tones in the time domain, the method comprising the steps of:
  - receiving an input signal in the time domain having a short correlation time
  - 5 component and a long correlation time component;
  - generating a delayed signal by delaying the input signal by a delay value;
  - generating a prediction signal based at least in part on the delayed signal;
  - comparing the input signal and the prediction signal; and
  - minimizing a variance between the input signal and the prediction signal.
- 10 2. The method of claim 1, wherein the delay value is an upper bound of the short correlation time component.
3. The method of claim 1, wherein the long correlation time component exhibits a high correlation value beyond an upper bound of the short correlation time component.
- 15 4. The method of claim 1, wherein the input signal is a time domain ADSL corrupted signal.
5. The method of claim 1, wherein NEXT interferences due to handshake tones are reduced.
6. The method of claim 1, wherein FEXT interferences due to handshake
- 20 tones are reduced.
7. The method of claim 1, wherein the steps are performed at a CPE end.
8. The method of claim 1, wherein the steps are performed at a CO end.
9. The method of claim 1, wherein the prediction signal is generated by a causal filter.
- 25 10. The method of claim 9, wherein the causal filter uses historical data to generate the prediction signal.
11. The method of claim 9, wherein the causal filter uses at least one past disturbance signal to generate the prediction signal.

12. The method of claim 1, wherein the step of minimizing is performed by a least mean square algorithm.

13. The method of claim 1, wherein the input is correlated to a disturbance signal.

5 14. A system for reducing interference due to handshake tones in the time domain, the system comprising:

an input for receiving an input signal in the time domain having a short correlation time component and a long correlation time component;

10 a delay module for generating a delayed signal by delaying the input signal by a delay value;

a filter for generating a prediction signal based at least in part on the delayed signal; wherein the input signal and the prediction signal are compared and a variance between the input signal and the prediction signal is minimized.

15 15. The system of claim 14, wherein the delay value is an upper bound of the short correlation time component.

16. The system of claim 14, wherein the long correlation time component exhibits a high correlation value beyond an upper bound of the short correlation time component.

20 17. The system of claim 14, wherein the input signal is a time domain ADSL corrupted signal.

18. The system of claim 14, wherein NEXT interferences due to handshake tones are reduced.

19. The system of claim 14, wherein FEXT interferences due to handshake tones are reduced.

25 20. The system of claim 14, wherein the system resides at a CPE end.

21. The system of claim 14, wherein the system resides at a CO end.

22. The system of claim 14, wherein the prediction signal is generated by a causal filter.

23. The system of claim 22, wherein the causal filter uses historical data to generate the prediction signal.

24. The system of claim 22, wherein the causal filter uses at least one past disturbance signal to generate the prediction signal.

5 25. The system of claim 14, wherein the variance is minimized by a least mean square algorithm.

26. The system of claim 14, wherein the input is correlated to a disturbance signal.